

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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U.S. PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte TIMOTHY M. SIVAVEC  
and  
ANGELO ANTHONY BRACCO

Appeal No. 2005-0663  
Application No. 09/682,142

ON BRIEF

Before KIMLIN, WARREN and OWENS, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-35 and 44-66. Claim 1 is illustrative:

1. A method, comprising:

conducting a permeable-reactive barrier (PRB) treatment of a contaminated aqueous medium; and

in-well monitoring by sensing effectiveness of the PRB treatment to generate a signal representing a characteristic of the sensed effectiveness; and

in-well transmitting the signal by a wireless communication to a remote collector or monitor.

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The examiner relies upon the following references as evidence of obviousness:

Misquitta	5,639,380	Jun. 17, 1997
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"Field Applications of *In Situ* Remediation Technologies:  
Permeable Reactive Barriers," US EPA Document No. 542-R-99-002  
(Apr. 1999) (hereinafter "PRB Papers")

"Design Guidance for Application of Permeable Barriers to Remediate Dissolved Chlorinated Solvents," Proponent: CEMP, US Army Corps of Engineers Document No. DG 1110-345-117 (Feb. 1997) (hereinafter "The Corps of Engineers Papers")

Appellants' claimed invention is directed to a method for the permeable-reactive barrier (PRB) treatment of contaminated aqueous medium, such as water. According to appellants, a PRB method depends upon natural groundwater flow and "a barrier of reactive materials is placed in the path of a naturally spreading plume of groundwater contaminants" (page 2 of principal brief, first paragraph). Appellants explain that "[i]f the PRB is properly placed with respect to the spreading plume and if the PRB is properly oriented and designed, the barrier will effectively intercept the plume and impart a residence treatment time to adequately treat the plume contaminants before the plume has passed through the barrier" (id.). The PRB method for treating contaminated water is in contrast to the "pump-and-treat" method wherein "contaminated water is extracted from groundwater, treated above ground and re-injected or discharged

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back into the groundwater" (page 1 of principal brief, last paragraph). The claimed method on appeal performs in-well monitoring by sensing the effectiveness of the PRB treatment and generating a signal that is in-well transmitted by wireless communication to a remote monitor.

Appealed claims 1-35 and 44-66 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the PRB papers or The Corps of Engineers Papers in view of Misquitta.

In accordance with the grouping of claims set forth at pages 12 and 13 of appellants' principal brief, the following groups of claims stand or fall together:

(I) claims 1, 5, 15, 17-22, 44-46, 50, 51, 55-61 and 63-65;

(II) claims 2 and 47;

(III) claims 3 and 48;

(IV) claims 4 and 49;

(V) claims 6, 26 and 52;

(VI) claims 7, 27 and 53;

(VII) claims 8, 28 and 54;

(VIII) claim 9

(IX) claims 10-14

(X) claim 16

(XI) claims 23-25 and 29-35;<sup>1</sup> and

(XII) claim 62.

We have thoroughly reviewed each of appellants' arguments for patentability. However, we are in complete agreement with the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Since we fully concur with the examiner's reasoned analysis and application of the prior art, as well as her cogent disposition of the arguments raised by appellants, we will adopt the examiner's reasoning as our own in sustaining the rejections of record.

There is no dispute that the PRB Papers and The Corps of Engineers Papers evidence that it was known in the art to employ the PRB treatment of contaminated water. As recognized by the examiner, the references fail to teach the presently claimed in-well transmitting of the signal which senses the effectiveness of the PRB treatment for wireless communication to a remote collector or monitor. However, as set forth by the examiner, Misquitta teaches the use of wireless transmission of in-well monitoring and sensing of contaminants in underground water.

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<sup>1</sup> Claims 36-43 have been cancelled.

Although appellants emphasize that Misquitta is directed to the pump-and-treat groundwater recovery system, and not a PRB method, we are in total agreement with the examiner that one of ordinary skill in the art would have found it obvious to utilize the well-known technology of wireless communication to transmit signals generated by monitoring and testing groundwater in either a pump-and-treat system or a PRB system. Appellants have apprised us of no reason why one of ordinary skill in the art would have been dissuaded from using wireless communication in a PRB method of the type described in the PRB Papers and The Corps of Engineers Papers.

We find no merit in appellants' argument that the Misquitta reference is non-analogous art to the PRB method disclosed in the primary references. Like the examiner, we find that Misquitta passes both aspects of the two-pronged test articulated in In re Wood, 582 F.2d 638, 199 USPQ 137 (CCPA 1978). We agree with the examiner that the primary references and Misquitta are directed to the same field of endeavor, namely, the remediation of contaminated groundwater. Also, we find that the examiner is on sound footing in concluding that the primary references and Misquitta are reasonably pertinent to the problem of transmitting

groundwater data from a monitoring well to a remote collector or monitor.

Appellants also contend that "[w]hile Misquitta discloses a monitor that transmits a signal, the signal is transmitted from 'in-well' by wire not 'wirelessly.' See Misquitta col. 8, lines 41 to 50" (page 15 of principal brief, penultimate paragraph). First, we note that the cited portion of Misquitta, column 8, lines 41-50, does not mention either wireless or wire transmission of a signal. However, as noted by the examiner, the discussion of reference Figure 8 at column 8, lines 21 et seq. states that "condition signal **410** from monitoring device **510** is transmitted by wireless means, such as radio waves, to computer controller" (emphasis added). Appellants respond in their Reply Brief at page 9, first paragraph, that:

The condition signal 410 is transmitted wirelessly only after it is received and converted by transmitter 810. Transmission from within the well is by wire as illustrated by straight line connection 410 contrasted to jagged line 820, which illustrates an above ground wireless transmission.

Appellants thus conclude that Misquitta "does not teach or suggest wireless transmission from within a well" (page 9 of Reply Brief, second paragraph).

The claim language on appeal does not require that the wireless transmitter, itself, be within the well, as implied by

appellants. In our view, the claim 1 language "in-well transmitting the signal by a wireless communication" only requires that an in-well signal be somehow transmitted by wireless communication. Similarly, the claim 44 language "a transmitter associated with the sensor in well to wirelessly transmit a signal" requires only that the signal from the sensor in well be transmitted wirelessly. Hence, we find that the Figure 8 embodiment of Misquitta depicts the presently claimed wireless transmission of a signal generated by a sensor located in the well. Moreover, even if the appealed claims defined the wireless transmitter as being in the well, we are satisfied that one of ordinary skill in the art would have found it obvious to place the wireless transmitter in the most practical and advantageous location, including within the well, if that proved to be the case.

As for the remaining arguments advanced by appellants with respect to the other claims on appeal, we subscribe to the reasoning set forth by the examiner in the Answer.



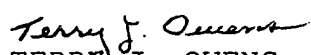
As a final point, we note that appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the prima facie case of obviousness established by the examiner.

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In conclusion, based on the foregoing and the reasons well-stated by the examiner, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (effective Sep. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

AFFIRMED

  
EDWARD C. KIMLIN )  
Administrative Patent Judge )  
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CHARLES F. WARREN )  
Administrative Patent Judge )  
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TERRY J. OWENS )  
Administrative Patent Judge )

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